

REMARKS

This application has been carefully reviewed in light of the Office Action dated March 9, 2007. Claims 1, 4, 5, 7, 13-17 and 21-24 remain in this application. Claims 1, 7, 13 and 17 are the independent Claims. Claims 1, 4, 5 and 13 have been amended. It is believed that no new matter is involved in the amendments or arguments presented herein. Reconsideration and entrance of the amendment in the application are respectfully requested.

Allowable Subject Matter

On page 10 of the Office Action, Claims 7 and 17 were indicated to be allowed. Claims 13-16 were indicated to be allowable if re-written to overcome the objections on page 3 of the Office Action.

Applicant thanks the Examiner and formally recognizes the allowed Claims 7 and 17, and allowable subject matter of Claims 13-16.

Claim Objection

Claim 13 was objected to because of an informality. In response, applicant has amended Claim 13 to address the concern expressed in the Office Action. Reconsideration and withdrawal of the above objection are respectfully requested.

Non-Art Based Rejections

Claims 1, 4, 5 and 21-24 were rejected under 35 U.S.C. § 112, second paragraph, for indefiniteness. In response Claims 1, 4 and 5 have been amended to address the concerns expressed in the Office Action. Reconsideration and withdrawal of the above § 112 rejections are respectfully requested.

Art-Based Rejections

Claims 1, 4, 5, 21 and 22 were rejected under 35 U.S.C. § 102(b) over U.S. Patent No. 5,505,788 (Dinwoodie); Claims 1, 4, 5, 21 and 22 were rejected under 35 U.S.C. § 103(a) over Japanese Application Publication No. JP 11-200561 (Yoshitaka) in view of U.S. Patent No. 6,525,264 (Ouchida) and Dinwoodie; Claim 23 was rejected as obvious over Yoshitaka in view of Ouchida, Dinwoodie and European Patent Application No. EP 1071139 A2 (Nakazima); Claim 23 was rejected as obvious over Dinwoodie in view of Nakazima; Claim 24 was rejected as obvious over Yoshitaka in view of Ouchida, Dinwoodie and Japanese Application Publication No. JP 2000-174313 (Masahiro); Claim 24 was rejected as obvious over Dinwoodie in view of Masahiro.

Applicant respectfully traverses the rejections and submits that the claims herein are patentable in light of the clarifying amendments above and the arguments below.

The Dinwoodie Reference

Dinwoodie is directed to a photovoltaic roofing assembly including a plurality of photovoltaic modules 204, 206, 208 provided above pre-formed spacers 212, 214, 216 and disposed on top of roofing membrane 202 (*see Dinwoodie; Abstract, FIG. 2A and Col. 7, lines 1-5*).

The Ouchida Reference

Ouchida is directed to a thin-film solar cell module. A thermal insulation layer 404 may be a thermal insulator or dry air layer (*see Ouchida; Abstract, FIG. 12 and Col. 18, lines 34-44*).

The Yoshitaka Reference

Yoshitaka is directed to a photocell mounted within a recess formed below the uppermost surface of a cell frame (*see Yoshitaki; Abstract and FIG. 2*).

The Nakazima Reference

Nakazima is directed to mounting a photovoltaic cell module to a tile body (*see Nakazima; Abstract and Paragraphs [0019]-[0022]*).

The Masahiro Reference

Masahiro is directed to a solar cell module that enables a worker to stand on the module when the worker installs and fixes the module (*see Masahiro; Abstract*).

The Claims are Patentable Over the Cited References

The present application is generally directed to solar cell technology for building applications.

As defined by amended independent Claim 1, a solar cell module includes a base member. A solar cell is provided on an uppermost surface of the base member such that a lower surface of the solar cell is positioned above and is mounted to the uppermost surface of the base member. An insulating support member is provided on a lower surface of the base member, and configured to be laid together with tiles on the roof of a building. The base member is rectangular and has a ridge-side surface projecting downwards with respect to a surface of a roof panel for mounting the solar cell module, an eaves-side surface, a trough-side surface having a trough section and an anti-trough side surface having a trough section. The solar cell module further includes an under-lapping part provided on the trough-side surface of the base member to extend from a ridge side of the roof to an eaves-side thereof.

The under-lapping part also overlaps a side edge portion of an adjacent tile or a side edge portion of an adjacent solar cell module. A projecting part is provided on the anti-trough side surface of the base member to extend from the ridge-side to the eaves-side of the roof. The projecting part overlaps a trough section of the adjacent tile or a trough section of the adjacent solar module.

The applied references do not disclose or suggest the features of the present invention as defined by amended independent Claim 1. In particular, the applied references do not disclose or suggest, "an under-lapping part is provided on the trough-side surface of said base member to extend from a ridge side of the roof to an eaves-side thereof, and also to overlap a side edge portion of an adjacent tile or a side edge portion of an adjacent solar cell module," and, "a projecting part is provided on the anti-trough-side surface of the base member to extend from the ridge-side to the eaves-side of the roof, and to overlap a trough section of the adjacent tile or a trough section of the adjacent solar module," as required by amended independent Claim 1.

Dinwoodie is directed to a photovoltaic roofing assembly that includes a plurality of photovoltaic modules 204, 206, 208 provided above pre-formed spacers 212, 214, 216, and which are disposed on top of a roofing membrane 202 (*See Dinwoodie; FIG. 2A and Col. 7, lines 1-5*). An under-lapping part provided on the trough-side surface that extends from a ridge side to an eaves-side is not disclosed (*See Dinwoodie; FIG. 9*). Dinwoodie also does not disclose or suggest an under-lapping part that overlaps a side edge portion of an adjacent tile or adjacent solar cell module. Furthermore, spacers 212, 214, 216 overlap each other while roofing membrane 202 is not provided with a projecting part that overlaps a trough section of either an adjacent tile or adjacent solar cell module.

In contrast, the present invention requires an under-lapping part provided on the trough side surface of the base member to extend from a ridge side of the roof to an eaves-side thereof, and also to overlap a side edge portion of an adjacent tile or a side edge portion of an adjacent solar cell module. A projecting part is further provided on the anti-trough side surface of the base member to extend from the ridge-side to the eaves-side of the roof, and to overlap a trough section of the adjacent tile or a trough section of the adjacent solar module. Therefore, even if a gap is present between the solar cell module and tile, rainwater flows along the under-lapping part and the trough section to achieve drainage.

Thus, Dinwoodie does not disclose or suggest each and every element of the present invention as required by amended independent Claim 1, and the ancillary references do not remedy the deficiencies of Dinwoodie.

Since the applied references fail to disclose, teach or suggest the above features recited in amended independent Claim 1, those references cannot be said to anticipate nor render obvious the invention which is the subject matter of that claim.

Accordingly, amended independent Claim 1 is believed to be in condition for allowance and such allowance is respectfully requested.

The remaining claims depend either directly or indirectly from amended independent Claim 1 and recite additional features of the invention which are neither disclosed nor fairly suggested by the applied references and are therefore also believed to be in condition for allowance.

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Amdt. Dated May 31, 2007
Reply to Office Action of March 9, 2007

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Conclusion

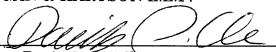
In view of the foregoing, it is respectfully submitted that the application is in condition for allowance. Reexamination and reconsideration of the application, as amended, are requested.

If for any reason the Examiner finds the application other than in condition for allowance, the Examiner is requested to call the undersigned attorney at the Los Angeles, California telephone number (310) 785-4721 to discuss the steps necessary for placing the application in condition for allowance.

If there are any fees due in connection with the filing of this response, please charge the fees to our Deposit Account No. 50-1314.

Respectfully submitted,
HOGAN & HARTSON L.L.P.

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